

REMARKS

Claim 56 has been rejected under 35 U.S.C. §112, second paragraph, for indefiniteness. The Office Action alleges that claim 56 provides for the use of a plastics product, but since the claim does not set forth any steps involved in the method/process it is unclear what method/process Applicants are intending to encompass. Also, claim 56 has been rejected under 35 U.S.C. §101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. §101.

Applicants respectfully traverse the §112 and §101 rejections of claim 56 and request that the rejections be reconsidered and withdrawn.

The test for definiteness under 35 U.S.C. §112, second paragraph, is whether "those skilled in the art would understand what is claimed when the claim is read in light of the specification." *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986).

Applicants have amended claim 56 to clarify that the plastic product as claimed in claim 30 is in the form of injection moldings, tubes, sheets or profiles for use in the vehicle industry, mechanical engineering, electrical engineering or electronic products. One skilled in the art would understand that the injection moldings, tubes, sheets or profiles of claim 56 are capable of use in the vehicle industry, mechanical engineering, electrical engineering, or electronic products. Thus, claim 56 is not indefinite and recites a use – as a molded part, tube, sheet or profile. Accordingly, Applicants respectfully request that the rejections be reconsidered and withdrawn.

Claims 30-36 and 56 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Rätzsch et al. (EP 1247837).

With respect to claim 30, the Office Action alleges that Rätzsch et al. teaches a modified aminoplastic for the production of semi-finished and molded products, comprising 5-50 wt.% thermoplastic polymer and 50-95 wt.% melamine resin (Abs). The preferred amounts of thermoplastic and melamine are 10 to 25% and 75 to 90%, respectively (¶0007). The plastic also comprises from 0.05 to 5%, based on the thermoplastic, of thermally decomposing free-radical generator (¶0035), as well as latent hardeners (¶0045). The Office Action acknowledges that Rätzsch et al. does not teach the claimed amount of free-radical generator or hardener, however, the Office Action contends that the experimental

Application No. 10/565,354  
Paper Dated: September 8, 2008  
In Reply to USPTO Correspondence of July 29, 2008  
Attorney Docket No. 4385-060043

modification of this prior art in order to ascertain optimum operating conditions fails to render Applicants' claims patentable in the absence of unexpected results. The amount of free-radical initiator controls the reaction rate and the amount of hardener controls the hardness of the plastic, thus, it would be obvious to optimize the amount.

With respect to claim 31, the Office Action alleges that Rätzsch et al. teaches the thermoplastic being polyesters based on maleic anhydride, fumaric acid, phthalic acid, isophthalic acid or adipic acid with ethylene glycol, butanediol, hexanediol, ethylhexanediol, trimethylolpropane or neopentyl glycol (¶0031).

With respect to claim 32, the Office Action alleges that Rätzsch et al. teaches the melamines having a molar mass of 500 to 5000 (Abs) and a melamine/formaldehyde ratio of 1:1.3 (Example 1).

With respect to claims 33-34, the Office Action alleges that Rätzsch et al. teaches the plastic comprising fillers such as cellulose (¶0067). While Rätzsch et al. does not teach the claimed amount of filler, the Office Action contends that experimental modification of this prior art in order to ascertain optimum operating conditions fails to render Applicants' claims patentable in the absence of unexpected results. The amount of filler controls the strength of the plastic, thus it would be obvious to optimize.

With respect to claim 35, the Office Action alleges that Rätzsch et al. teaches the plastic comprising 0.05 to 3 wt.% of an emulsifier (hydrophobicizer) such as a copolymer of C<sub>4</sub>-C<sub>20</sub> ethylenically unsaturated dicarboxylic anhydride and ethylenically unsaturated monomer with ammonia (¶0059). Such a compound would have imide groups derived from ammonia and the anhydride.

With respect to claim 36, the Office Action alleges that Rätzsch et al. teaches the plastic used for profiles (¶0065).

With respect to claim 56, the Office Action alleges that Rätzsch et al. teaches the plastic used for the production of pressed parts, foamed plastics and coating layers (¶0065). Such plastics can be used in the vehicle industry.

Applicants respectfully, but strenuously, traverse and request reconsideration and withdrawal of the rejection.

As reiterated by the Supreme Court in *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. \_\_\_, 82 U.S.P.Q.2d 1385 (2007), the framework for the objective analysis for determining obviousness under 35 U.S.C. §103 is stated in *Graham v. John Deere*. Examination

Application No. 10/565,354  
Paper Dated: September 8, 2008  
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Attorney Docket No. 4385-060043

Guidelines for Determining Obviousness Under 35 U.S.C. 103 in View of the Supreme Court Decision in *KSR International Co. v. Teleflex Inc.*, 72 Fed. Reg., No. 195 (October 10, 2007) at page 57527 (hereinafter “Examination Guidelines”). The factual inquiries enunciated by the Court are as follows:

- (1) Determining the scope and content of the prior art;
- (2) Ascertaining the differences between the claimed invention and the prior art; and
- (3) Resolving the level of ordinary skill in the pertinent art.

Examination Guidelines at page 57527.

“The ultimate determination of patentability must be based on consideration of the entire record, by a preponderance of evidence, with due consideration to the persuasiveness of any arguments and any secondary evidence.” Manual of Patent Examining Procedure, (Sept. 2007) §716.01(d) and In re Oetiker, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992).

The rejection overlooks that the present plastic products are based on interpenetrating networks of crosslinked thermoplastics and crosslinked melamine resin ethers, whereas the modified aminoplast products according to Rätzsch et al. do not exist in form of interpenetrating networks.

Pending claim 30 relates to plastic products based on interpenetrating networks of 10-50 wt% of at least one crosslinked thermoplastic and 90-50 wt% of at least one crosslinked melamine resin ether, wherein the crosslinked product has been produced from a mixture of thermoplastics comprising a free-radical generator and melamine resin ether comprising a hardener. Rätzsch et al. describes the synthesis of modified aminoplasts for semi-finished and moulded products having improved elasticity and comprising of 50-90 wt% non-etherified aminoplast precondensates and 50-5 wt% thermoplastic polymers. The thermoplastic polymers are present as particles with a particle diameter of 5-500  $\mu\text{m}$ . The particles are finely dispersed into the aminoplast precondensate or form a homogenous blend with the aminoplast precondensates ([0006]).

The modified aminoplasts may also contain a thermally decomposable radical generator ([0032], [0035]) and hardeners ([0045]).

The object of Rätzsch et al. is the synthesis of modified aminoplasts which can be further processed to semi-finished or moulded products. The semi-finished or moulded products are susceptible to a thermal after-treatment. The aminoplasts according to Rätzsch

et al. are not complete hardened systems, and thus the thermoplastics and aminoplast precondensates are not crosslinked.

In order to form the modified aminoplasts, ethylenically unsaturated thermoplastic monomers are polymerised in the presence of the aminoplast precondensates by adding radical generators ([0033]).

The polymerisation reaction occurring in the presence of the aminoplasts provides a homogenous distribution of the thermoplastic polymers in the aminoplasts, but not a crosslinking of the thermoplastic polymer.

Following the polymerisation reaction, the complete hardening of the aminoplasts takes place in the thermal after-treatment. The thermoplastic polymer is not chemically reactive in the thermal after-treatment and thus is not able to form a crosslinked network.

Rätzsch et al. also does not disclose the use of a radical generator for starting the crosslinking process of the thermoplastic polymers.

The addition of radical generators serves only the polymerisation of the thermoplastic monomers in the presence of aminoplast and optionally a partial linking of the thermoplastic polymers with the aminoplasts but not the crosslinking and hardening of the thermoplastics polymers.

The thermoplastic polymers contained in the aminoplasts according to Rätzsch et al. do melt in the thermal finishing-treatment; they are however not chemically reactive. The thermoplastic polymers are not able to crosslink amongst each other or with the aminoplasts, and thus are not able to form an interpenetrating network.

Thus, according to the teaching of Rätzsch et al., crosslinked aminoplasts may be obtained in the course of the thermal finishing-treatment in which non-crosslinked thermoplastic polymers are incorporated into.

The present plastic products are obtained by shaping and crosslinking of structural viscous melts of mixtures of melamine resin ethers comprising a hardener and thermoplasts comprising radical generators. This guarantees a simultaneous crosslinking reaction of thermoplasts and aminoplasts. Thus, the forming networks can penetrate with each other. The synthesis of the interpenetrating networks of the present plastic products is only possible if the crosslinking process of aminoplasts and thermoplasts proceed simultaneously. With every crosslinking reaction the melt viscosity of a component is

Application No. 10/565,354  
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Attorney Docket No. 4385-060043

changed. An interpenetration of the networks can only be achieved if the melt viscosities of both components are almost similar at every time point of the crosslinking reaction. Otherwise the person skilled in the art expects a demixing of the components.

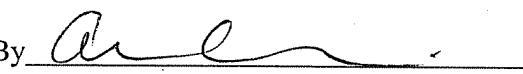
According to the present invention similar melt viscosities are obtained by providing melamine resin ethers and thermoplasts. The excellent melt viscosity of the melamine resin ether is especially achieved by etherification of the melamine resin with butanol (see Examples 1.1. or 2.1.)

In contrast, the melamine resins according to Rätzsch et al. are not etherified ([0006]), thus having a low melt viscosity. A mixing of these aminoplasts with the forming thermoplasts is not possible. Hence, the formation of interpenetrating networks simply cannot occur.

Accordingly, Applicants respectfully request that the §103(a) rejection of claims 30-36 and 56 over Rätzsch et al. be reconsidered and withdrawn.

In view of the foregoing remarks, Applicants respectfully assert that the present claims comply with the requirements of 35 U.S.C. §§101 and 112 and are not obvious over the cited prior art. Reconsideration and withdrawal of the rejections and allowance of the pending claims is respectfully requested.

Respectfully submitted,  
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